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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): John C. Eidson

Serial No.: 10/035,110

Examiner: Phan T.

Filing Date: December 24, 2001

Group Art Unit: 2841

Title: DISTRIBUTED SYSTEM TIME SYNCHRONIZATION INCLUDING A TIMING SIGNAL PATH

COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF

Sir:

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on 4-24-06

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) **\$500.00**.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

☐ (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)(1)-(5)) for the total number of months checked below:

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☐ The extension fee has already been filled in this application.

☒ (b) Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account **50-1078** the sum of **\$500.00**. At any time during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account **50-1078** pursuant to 37 CFR 1.25.

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Date of Facsimile:

Typed Name: Paul H. Horstmann

Signature: Paul H. Horstmann

Respectfully submitted,

John C. Eidson

By Paul H. Horstmann

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Reg. No. 36,167

Date: 6-19-06

Telephone No. 310-376-0218



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

John C. Eidson

Application No: 10/035,110

Filed: 12-24-2001

For: DISTRIBUTED SYSTEM TIME
SYNCHRONIZATION INCLUDING
A TIMING SIGNAL PATH

Examiner: Phan T.

Art Unit: 2841

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Paul H. Horstmann

Name of Person Mailing Correspondence

Paul H. Horstmann
Signature

6-19-06
Date

Appellant's Brief (Pursuant to 37 C.F.R. §41.37)

Dear Sir:

Applicant/ Appellant submits this Appeal Brief in connection with the
above-referenced patent application which is on appeal to the Board of Patent
Appeals and Interferences.

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REAL PARTY IN INTEREST

The real party in interest in this application is Agilent Technologies, Inc.

RELATED APPEALS AND INTERFERENCES

Appellant is unaware of any other related appeals or interferences that may directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

STATUS OF THE CLAIMS

Claims 1-4 and 7-15 stand rejected under 35 U.S.C. §112, first paragraph.

Claims 1-4 and 7-15 stand rejected under 35 U.S.C. §102(a)¹ in view of International Publication Number WO 01/95550 of *Holmeide et al.* ("*Holmeide*").

Appellant appeals the rejection of claims 1-4 and 7-15. Claims 1-4 and 7-15 as currently pending are set forth in the attached Appendix.

STATUS OF AMENDMENTS

Appellant is unaware of any amendments filed after the Final Office Action mailed January 24, 2006 which finally rejected claims 1-4 and 7-15.

¹ The examiner has stated, curiously, that appellant's claimed invention would have been obvious even though the rejection of claims 1-4 and 7-15 is based on 35 U.S.C. §102. See page 5, lines 5-6 of the Office Action dated 1-24-06.

SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 1 is directed to overcoming errors in network-based time synchronization that are caused by jitter on a network by using a timing signal path separate from the network to carry a timing signal. (See page 2, lines 7-8 and page 3, lines 3-14 of Appellant's specification). A distributed system according to independent claim 1 includes a network (See Figure 1 reference 20 of Appellant's specification) and a timing signal path (See Figure 1 reference 22 of Appellant's specification). A distributed system according to independent claim 1 includes a master clock that transfers a timing signal on the timing signal path in response to a time event in the master clock (See page 6, lines 1-4 of Appellant's specification) and that transfers a time-stamp on the network in response to the time event (See page 6, lines 25-27 of Appellant's specification). A distributed system according to independent claim 1 includes a slave clock that adjusts its local time in response to the timing signal carried on the timing signal path and the time-stamp carried on the network. (See page 6, lines 29-33 of Appellant's specification).

The means for transferring a timing signal on a timing signal path as claimed in claim 1 includes the timing PHY 112, the comparator 118, and the time-bomb latch 116 in Figure 3 as described on page 10, lines 1-30 of appellant's specification. The means for transferring a time-stamp via a network as claimed in claim 1 is shown as the network PHY 114 in Figure 3 of appellant's specification. The means for receiving a timing signal via a timing signal path is shown as the timing PHY 112 and the edge detector 120 in Figure 3 as described on page 10, line 32 through page 11, line 4 of appellant's specification. The means for receiving a time-stamp via a network as claimed in claim 1 is shown as the network PHY 114 in Figure 3 of appellant's specification. The means for adjusting a local time in a slave clock in response to a timing signal and a time-stamp is shown as the node processor 110 in Figure 3 as described on page 11, lines 7-11 of appellant's specification.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

I: Rejection of claims 1-4 and 7-15 under 35 U.S.C. §112, first paragraph.

II: Rejection of claims 1-4 and 7-15 as being anticipated by *Holmeide*.

ARGUMENT

I: Appellant's specification satisfies the requirements of 35 U.S.C. §112, first paragraph, with respect to claims 1-4 and 7-15.

The examiner has rejected claims 1-4 and 7-15 as failing to comply with the written description requirement² of 35 U.S.C. §112, first paragraph, because the claimed "timing signal path separate from the network" is not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor had possession of the claimed invention at the time it was filed. (Page 2, Office Action, 1-24-06). The examiner has stated that "there are no recitations and/or drawings of a separate timing signal path." (Page 2, Office Action, 1-24-06). It is submitted that the examiner has based the rejection of claims 1-4 and 7-15 under 35 U.S.C. §112, first paragraph, solely on the fact that appellant's specification does not contain the word "separate³."

The subject matter of the claim need not be described literally using the same terms in order to satisfy the written description requirement. (See MPEP 2163.02). Instead, possession of a claimed invention is shown by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention. *Lockwood v. American Airlines, Inc.*, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997). The objective standard for the written description requirement is whether the description clearly allows persons of ordinary skill in the art to recognize that the inventor has invented what is claimed. *In re Gosteli*, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989).

² "The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same..." (35 U.S.C. §112, first paragraph) (emphasis added).

³ In fact the examiner highlights the word "separate" in bold text in formulating his rejection. See page 2, line 13, Office Action, 1-24-06.

Appellant submits that the written description requirement of 35 U.S.C. §112, first paragraph, is satisfied with respect to claims 1-4 and 7-15 because the words and structures set forth in the text and figures of appellant's specification clearly convey to one skilled in the art that appellant possessed the claimed "timing signal path separate from the network" at the time the application was filed. For example, Figure 1 of appellant's drawings shows a network 20 and a timing signal path 22 as separate structures. In addition, Figure 3 of appellant's drawings shows a clock node 100 having a network PHY 114 for communicating on the network 20 and a separate timing PHY 112 for communicating on the timing signal path 22. Moreover, appellant's specification describes how to implement the network 20 and the timing signal path 22 as separate structures. (See page 8, lines 15-23 of Appellant's specification). Furthermore, appellant's claimed timing signal path carries a timing signal and appellant's claimed network carries a time-stamp and appellant's specification describes the disadvantages of using the same network structure to carry both a timing signal⁴ and a time-stamp. (See page 1, line 33 through page 2, line 8 of Appellant's specification).

⁴ When the same network structure is used to carry both a timing signal and a time-stamp a timing signal is embodied as a timing packet on the network and a time-stamp is carried in a follow up packet on the network. See Page 1, line 30 and page 6, lines 25-27 of Appellant's specification

II: Claims 1-4 and 7-15 are not anticipated by *Holmeide* because *Holmeide* does not disclose the limitations of claim 1.

Appellant submits that claim 1, and claims 2-4 and 7-15 which depend from claim 1, are not anticipated by *Holmeide* because *Holmeide* does not disclose overcoming errors in network-based time synchronization that are caused by jitter on a network by using a timing signal path separate from the network to carry a timing signal as claimed in claim 1. *Holmeide* does not disclose a master clock that transfers a timing signal on a timing signal path in response to a time event in the master clock as claimed in claim 1. Moreover, *Holmeide* does not disclose a master clock that transfers a time-stamp on a network in response to a time event in the master clock as claimed in claim 1. Furthermore, *Holmeide* does not disclose a slave clock that adjusts its local time in response to a timing signal carried on a timing signal path and a time-stamp carried on a network as claimed in claim 1.

A: *Holmeide* does not disclose overcoming errors in network-based time synchronization that are caused by jitter on a network by using a timing signal path separate from the network to carry a timing signal as claimed in claim 1.

Appellant respectfully submits that *Holmeide* does not disclose overcoming errors in network-based time synchronization that are caused by jitter on a network by using a timing signal path separate from the network to carry a timing signal as claimed in claim 1. Instead, *Holmeide* teaches overcoming errors in network-based time synchronization that are caused by jitter (variable delay) on a network by integrating a time server into every element on the network that causes variable delay in forwarding packets on the network. (*Holmeide*, page 7, lines 3-8).

B: *Holmeide* does not disclose a master clock that transfers a timing signal on a timing signal path in response to a time event in the master clock as claimed in claim 1.

Appellant respectfully submits that *Holmeide* does not disclose a master clock that transfers a timing signal on a timing signal path in response to a time event in the master clock as claimed in claim 1. Instead, *Holmeide* discloses a time server, i.e. a master clock, that transfers time information on a network in response to a request packet received via the network from a client, i.e. a slave clock. (*Holmeide*, page 5, lines 1-2). It is submitted that a request packet received via a network as disclosed in *Holmeide* is not a time event in a master clock as claimed in claim 1 because a time event as claimed in claim 1 is internal to the master clock (See page 6, lines 4-14 of Appellant's specification) whereas a request packet as disclosed in *Holmeide* is a network message from a network client.

C: *Holmeide* does not disclose a master clock that transfers a time-stamp on a network in response to a time event in the master clock as claimed in claim 1.

Appellant respectfully submits that *Holmeide* does not disclose a master clock that transfers a time-stamp via a network in response to a time event in the master clock as claimed in claim 1. Instead, *Holmeide* discloses a time server that generates time stamps in response to a request packet received from a client via a network. (*Holmeide*, page 5, lines 8-14 and page 8, lines 8-15).

D: *Holmeide* does not disclose a slave clock that adjusts its local time in response to a time-stamp carried on a network and a timing pulse carried on a timing signal path that is separate from the network as claimed in claim 1.

Appellant respectfully submits that *Holmeide* does not disclose a slave clock that adjusts its local time in response to a time-stamp carried on a network and a timing pulse carried on a timing signal path that is separate from the network as claimed in claim 1. Instead, *Holmeide* discloses a network client that adjusts its local time in response to information carried on a

network only. (*Holmeide*, page 3, lines 12-14 and 31-35, and page 5, lines 1-16).

For example, *Holmeide* discloses

a method for distributing time synchronization information on a computer network...

(*Holmeide*, page 3, lines 12-14) (emphasis added) and specifically discloses

Ethernet networks (*Holmeide*, page 3, lines 26 and 33) and states that

the invention will be found useful in numerous other applications and in connection with other types of networks...

(*Holmeide*, page 3, lines 33-35) (emphasis added). *Holmeide* does not disclose a timing signal path that is separate from the network as claimed in claim 1.

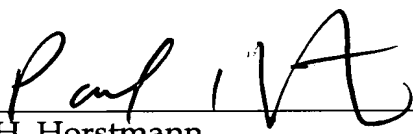
CONCLUSION

Appellant respectfully submits that the stated rejections cannot be maintained in view of the arguments set forth above. Appellant respectfully submits that all of the claims are patentable under 35 U.S.C. §112 and under 35 U.S.C. §102 over the references cited by the Examiner and requests that the Board of Patent Appeals and Interferences direct allowance of the rejected claims.

Respectfully submitted,

By

Date: 6-19-06



Paul H. Horstmann
Reg. No. 36,167

CLAIMS APPENDIX

1. A distributed system, comprising:
network;
timing signal path separate from the network;
master clock having means for transferring a timing signal on the timing signal path in response to a time event associated with the master clock and means for transferring a time-stamp via the network in response to the time event;
slave clock having means for receiving the timing signal via the timing signal path and means for receiving the time-stamp via the network and having means for adjusting a local time in the slave clock in response to the timing signal and the time-stamp.
2. The distributed system of claim 1, wherein the timing signal comprises at least one signal pulse which is aligned to the time event.
3. The distributed system of claim 1, wherein the means for adjusting includes means for generating a time-stamp in response to the timing signal.
4. The distributed system of claim 3, wherein the time-stamp from the master clock indicates a local time in the master clock.
7. The distributed system of claim 4, wherein the means for adjusting further comprises means for determining a correction to the local time in the slave clock in response to the time-stamps.
8. The distributed system of claim 1, wherein the timing signal comprises a continuous frequency signal.

9. The distributed system of claim 8, wherein the continuous frequency signal includes a distinguished pattern which is aligned to the time event.
10. The distributed system of claim 9, wherein the means for adjusting includes means for generating a time-stamp in response to the distinguished pattern.
11. The distributed system of claim 9, wherein the means for adjusting further includes means for obtaining a time-stamp from the master clock that indicates a local time in the master clock.
12. The distributed system of claim 11, wherein the means for obtaining comprises means for obtaining the time-stamp via the network.
13. The distributed system of claim 11, wherein the means for obtaining comprises means for obtaining the time-stamp via the timing signal path.
14. The distributed system of claim 13, wherein the time-stamp from the master clock is encoded in the continuous frequency signal.
15. The distributed system of claim 11, wherein the means for adjusting further comprises means for determining a correction to the local time in the slave clock in response to the time-stamps.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.